

REMARKS/ARGUMENTS

This Amendment is being filed in response to the Office Action dated January 28, 2010. Reconsideration and allowance of the application in view of the amendments made above and the remarks to follow are respectfully requested.

Claims 1-4 and 7-21 are pending in this application. Claims 1, 11 and 19 are independent claims.

In the Office Action, claims 1-4, 7-10 and 18-21 are rejected under 35 U.S.C. §103(a) over U.S. Patent No. 6,344,837 to Gelsey ("Gelsey") in view of U.S. Patent No. 5,953,148 to Moseley ("Moseley"). Claims 11-15 are rejected under 35 U.S.C. §103(a) over Gelsey in view of Moseley in view of U.S. Patent No. 6,154,855 to Norman ("Norman"). Claim 16 is rejected under 35 U.S.C. §103(a) over Gelsey in view of Moseley in view of U.S. Patent No. 6,363,170 to Seitz ("Seitz"). Claim 17 is rejected under 35 U.S.C. §103(a) over Gelsey in view of Moseley in view of Norman in view of Seitz. These rejections are respectfully traversed. It is respectfully submitted that claims 1-4 and 7-21 are allowable over Gelsey in view of Moseley alone and in view of any combination of Norman and Seitz for at least the following reasons.

Gelsey, at col. 9, lines 4-10, as referenced by the Office Action, describes an intercept (R,S), which is a point SP where a ray R first intercepts a scene S. In the referenced section and elsewhere, Gelsey describes only one intercept (R,S) point, SP. As can be seen from FIGs. 2 and 3 of Gelsey, displaying point P will not display any part of the scene S.

Contrarily, claim 1 recites "converting a 3-D scene model into a plurality of 3-D scene points" and "providing at least one of the plurality of 3-D scene points to visualize on a 3-D display plane". Thus, because claim 1 teaches visualizing at least one of the plurality of 3-D scene points and not a point of an intercept as shown by Gelsey, claim 1 is not anticipated or made obvious by Gelsey in view of Moseley.

Further, the Office Action references col. 8, lines 26-36 and FIG. 13 of Gelsey as showing "calculating for each of each of the plurality of 3-D pixels a contribution of light from the plurality of 3-D pixels to generate at least a part of one 3-D scene point of the plurality of 3-D scene points" as recited in claim 1. While Gelsey does describe Directionally Modulated Pixels (DMP), it is respectfully submitted that nothing in the cited sections of Gelsey and in the rest of Gelsey for that matter discloses each of the plurality of 3-D pixels generating calculating the contribution of light to visualize at least a part of one 3-D scene point.

Furthermore, with regard to the master and slave pixels within the rows and/or columns. According to claim 1, the master pixel calculates the contribution of light and provides its calculations to the slave pixels in the rows or columns. Contrary to the position taken on page 5 of the Office Action, it is the calculation of the light contribution by the master pixel before distribution to the 3-D pixels in the rows and/or columns that is recited in the claims.

In the Response to Arguments section of the Office Action, on pages 16 to 21, it is argued that Mosley and the claimed 3-D display of the present application are similar (e.g.,

see, Office Action, page 19, lines 13-15), and that the groupings of Mosley's 2D pixels pass or share information (e.g., see, Office Action, page 19, last paragraph). At page 21 of the Office Action, Mosley's and the claimed 3-D display are compared concluding as follows:

The diagram shows that if the master 3D pixel comprises the first three 2D pixels in the horizontal row, then this 3D master pixels may pass 3-D scene point data onto the slave 3D pixels later on down the horizontal row.

It is respectfully submitted that as discussed above, this argument and its conclusion do not address the limitation of claim 1, which recites (emphasis added) "the contribution of light to a certain 3-D scene point is calculated within one first 3-D pixel of a row or column prior to the visualization of the certain 3-D scene point for all first 3-D pixels of the row or column that receive the certain 3-D scene point, respectively." In other words, nothing in Mosley addresses, calculating information required by all 3-D pixels of the row or column at only one 3-D pixel of the row or column, which then passes the calculated information to the remaining 3-D pixels of the row or column. An example of this is discussed at page 4, second paragraph of the present specification.

Finally, it is undisputed that Gelsey does not teach, disclose or suggest the last portion of claim 1, yet only col. 3, lines 13-21 and its Figures of Mosley is referenced by the Office Action to reject the last portion of claim 1. It is respectfully submitted that the referenced section only provides a general discussion of source and gate lines, but is silent on "the one first 3-D pixel acts as a master pixel for the row or column, while each remaining one or more first 3-D pixels of the row or column act as slave pixels, the slave pixels receive the

calculated contribution of the light of the certain 3-D scene point from the master pixel" as recited in claim 1.

It is respectfully submitted that the method of claim 1 is not anticipated or made obvious by the teachings of Gelsey in view of Moseley. For example, Gelsey in view of Moseley does not teach, disclose or suggest, a method that amongst other patentable elements, comprises (illustrative emphasis provided)

converting a 3-D scene model into a plurality of 3-D scene points;
providing at least one of the plurality of 3-D scene points to visualize on a 3-D display plane comprising a plurality of 3-D pixels that are organized in rows and columns and are directionally modulated;

calculating for each of the plurality of 3-D pixels a contribution of light from the plurality of 3-D pixels to generate at least a part of one 3-D scene point of the plurality of 3-D scene points; and

performing at least one of emitting and transmitting the calculated contribution of the light by each of one or more first 3-D pixels to generate at least part of the one 3-D scene point,

wherein the contribution of light to a certain 3-D scene point is calculated within one first 3-D pixel of a row or column prior to the visualization of the certain 3-D scene point for all first 3-D pixels of the row or column that receive the certain 3-D scene point, respectively, and

wherein the one first 3-D pixel acts as a master pixel for the row or column, while each remaining one or more first 3-D pixels of the row or column act as slave pixels, the slave pixels receive the calculated contribution of the light of the certain 3-D scene point from the master pixel.

as recited in claim 1, and as substantially recited in claim 11.

It is respectfully submitted that Gelsey is admitted to be lacking that which is recited in the claims and Moseley, which is relied on for showing the last feature of the claims, merely shows an interconnection of pixels but does not teach, disclose or suggest the master/slave relationship, nor the calculating of 3-D scene points by the master pixel as

recited in the claims.

It further is respectfully submitted that the method of claim 19 is not anticipated or made obvious by the teachings of Gelsey in view of Moseley. For example, Gelsey in view of Moseley does not teach, disclose or suggest, a method that amongst other patentable elements, comprises (illustrative emphasis provided) "each 3-D pixel alters received transmitted calculated contribution of light of the 3-D scene point prior to putting out the 3-D scene point to at least one neighboring 3-D pixel that receives the altered calculated contribution of light for visualization of the 3-D scene point and wherein for each 3-D pixel that receives an altered 3-D scene point, the act of calculating comprises calculating the contribution of light from that 3-D pixel based on the altered 3-D scene point" as recited in claim 19.

As discussed above and in the response to the previous Office Action, it is respectfully submitted that a discussion of conductors that extend between the columns and rows of pixels in Moseley, even taken together with Gelsey does not rise to a level of anticipating or rendering claim 19 obvious.

Norman and Seitz are cited for allegedly showing elements of dependent claims and as such, do not cure the deficiencies in each of Gelsey and Moseley.

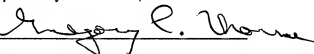
Based on the foregoing, the Applicants respectfully submit that independent claims 1, 11 and 19 are patentable over Gelsey in view of Moseley alone and in view of any combination of Norman and Seitz and notice to this effect is earnestly solicited. Claims 2-10, 12-17 and 20-21 respectively depend from one of claims 1, 11 and 19 and accordingly

are allowable for at least this reason as well as for the separately patentable elements contained in each of said claims. Accordingly, separate consideration of each of the dependent claims is respectfully requested.

In addition, Applicants deny any statement, position or averment of the Examiner that is not specifically addressed by the foregoing argument and response. Any rejections and/or points of argument not addressed would appear to be moot in view of the presented remarks. However, the Applicants reserve the right to submit further arguments in support of the above stated position, should that become necessary. No arguments are waived and none of the Examiner's statements are conceded.

Applicants have made a diligent and sincere effort to place this application in condition for immediate allowance and notice to this effect is earnestly solicited.

Respectfully submitted,

By 

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